

1. An in-mold label comprising a core layer with a first and second surface and a heat seal layer on the first surface of the core layer, wherein the heat seal layer comprises a polyolefin having a peak melt temperature of less than about 110°C and where less than about 25% of polyolefin melts at a temperature of less than 50°C as measured by differential scanning calorimetry.

2. The label of claim 1 wherein the polyolefin is derived from an olefin having two to about eight carbon atoms.

3. The label of claim 1 wherein the polyolefin is derived from ethylene, propylene or butylene.

4. The label of claim 1 wherein the polyolefin is a copolymer of ethylene or propylene with an olefin having from about two to about ten carbon atoms.

5. The label of claim 1 wherein the polyolefin is prepared with a metallocene catalyst.

6. The label of claim 1 wherein the polyolefin has a Mw/Mn ratio less than about 3.5.

7. The label of claim 1 wherein the heat seal layer is a blend of the polyolefin and a film-forming polymer.

8. The label of claim 1 wherein the heat seal layer is a blend of (i) a polyolefin and (ii) one or more polymers selected from the group consisting of polyolefins other than (i), polystyrene, polyethylene acrylic acid, polyethylene methacrylic acid, polyethylene acrylate ester, polyethylene methacrylate ester, polyethylene vinyl alcohol, polyethylene vinyl acetate, polyethylene vinyl chloride, polycarbonate, styrene maleic anhydride copolymer, styrene acrylonitrile polymer, acrylonitrile butadiene styrene polymer, nylon, polyurethane, polysulfone, polyvinylidene chloride, ionomers based on alkali metal or zinc salts of ethylene-methacrylic acid, polyacrylates, polymethacrylates, cellulose, fluoroplastics, polyacrylonitriles and thermal polyesters.

9. The label of claim 1 wherein the heat seal layer is a blend of the polyolefin and ethylene vinyl acetate.

10. The label of claim 1 wherein the heat seal layer is substantially free of ethylene vinyl acetate.

5 11. The label of claim 1 wherein the polyolefin is a low density polyethylene, polypropylene or polybutylene.

12. The label of claim 1 wherein the heat seal layer is free of carrier resins.

10 13. The label of claim 1 wherein the label has a shrinkage of less than about 5%.

14. The label of claim 1 wherein the label has a thickness of less than about 7 mils.

15 15. The label of claim 1 further comprising a printable skin layer on the second surface of the core layer.

16. The label of claim 1 wherein the label is optically opaque.

17. The label of claim 1 wherein the label is optically transparent.

20 18. An in-mold label comprising a core layer with a first and second surface, a heat seal layer on the first surface of the core layer, and a printable skin layer on the second surface of the core layer, wherein the heat seal layer comprises a polyethylene or an ethylene copolymer having a peak melt temperature of less than about 110°C and wherein less than about 25% of polyolefin melts at a temperature of less than 50°C as measured by differential scanning calorimetry.

25 19. The label of claim 18 wherein the polyolefin is an ethylene copolymer derived from ethylene and an olefin having from about 3 to about 12 carbon atoms.

20 20. The label of claim 18 wherein the polyolefin is an ethylene copolymer derived from ethylene and one selected from the group consisting of propylene, butylene, pentene, 4-methyl-1-pentene, hexene, heptene, and octene.

21. The label of claim 18 wherein the polyolefin is prepared with a metallocene catalyst.

22. The label of claim 18 wherein the heat seal layer is a blend of the (i) polyethylene or an ethylene copolymer and (ii) a film-forming polymer.

23. The label of claim 18 wherein the heat seal layer is a blend of (i) polyethylene or an ethylene copolymer and (ii) one or more polymers selected from the group consisting of polyolefins other than (i), polystyrene, polyethylene acrylic acid, polyethylene methacrylic acid, polyethylene acrylate ester, polyethylene methacrylate ester, polyethylene vinyl alcohol, polyethylene vinyl acetate, polyethylene vinyl chloride, polycarbonate, styrene maleic anhydride copolymer, styrene acrylonitrile polymer, acrylonitrile butadiene styrene polymer, nylon, polyurethane, polysulfone, polyvinylidene chloride, ionomers based on alkali metal or zinc salts of ethylene-methacrylic acid, polyacrylates, polymethacrylates, cellulose, fluoroplastics, polyacrylonitriles and thermal polyesters.

24. The label of claim 18 wherein the heat seal layer is a blend of the polyolefin and ethylene vinyl acetate.

25. The label of claim 18 wherein the heat seal layer is substantially free of ethylene vinyl acetate.

26. A plastic container containing the in-mold label of claim 1.

27. A plastic container containing the in-mold label of claim 18.

28. A process for in-mold labeling comprising the steps of: forming an label comprising a core layer with a first and second surface and a heat seal layer on the first surface of the core layer, wherein the heat seal layer comprises a polyolefin having a peak melt temperature of less than about 110°C and where less than about 25% of the polyolefin melts at a temperature of less than 50°C as measured by differential scanning calorimetry; inserting the label into a mold for producing a plastic substrate with an inside and outside surface; and forming a plastic substrate in the mold with sufficient heat to bond the heat seal layer of the label to the outside surface of the plastic substrate.

29. A process for preparing an in-mold label comprising the steps of coextruding a multi layer film comprising a core layer having a first and second and a heat seal layer of the first surface of the core layer and wherein the heat seal

layer comprises a polyolefin having a peak melt temperature of less than about 110°C and where less than about 25% of the polyolefin melts at a temperature of less than 50°C as measured by differential scanning calorimetry, stretching the multilayer film is one or two directions, and annealing the film at a temperature above 75°C.

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